



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,300	02/12/2004	Craig L. Brodeur	MYKR1430	5309

44654 7590 03/22/2005

SPRINKLE IP LAW GROUP  
1301 W. 25TH STREET  
SUITE 408  
AUSTIN, TX 78705

EXAMINER
----------

BAHTA, KIDEST

ART UNIT	PAPER NUMBER
----------	--------------

2125

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/777,300	<b>Applicant(s)</b> BRODEUR ET AL.	
	<b>Examiner</b> Kidest Bahta	<b>Art Unit</b> 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-32 and 38-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/23/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 30-32 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Bearden et al. (U.S. Patent 6,167,965).

Regarding claims 30-32 and 38-40, Bearden discloses receive pressure measurements from a sensor (Fig. 2A); monitor the pressure measurements for a fluctuation (Fig. 2A); compare the fluctuation to a predetermined limit (Fig. 2A, step 217); if the fluctuation is greater than the predetermined limit, generate an alarm (column 13, lines 1-24 ); the sensor is a sensor downstream of a pressure loss element (Fig. 1L, element 117) and the sensor is a sensor downstream of a valve (Fig. 1L, element 187).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-32 and 38-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bearden et al. (U.S. Patent 6,167,965) in view of Brown (U.S. Patent 6,119,710).

Regarding claims 1, 11, 20, 41 and 50, Bearden discloses an inlet (Fig. 3A, element 318); an outlet in fluid communication with the inlet (Fig. 3A); a pressure loss element between the inlet and outlet in fluid communication with the inlet and outlet (Fig. 3D), a first pressure sensor located upstream from the pressure loss element configured to measure a first pressure of a fluid flowing through the flow control device (Fig. 1L, element 202); a second pressure sensor located downstream from the pressure loss element configured to measure a second pressure of the fluid flowing through the flow control device (Fig. 2L, element 117); and a controller coupled to the first pressure sensor and the second pressure sensor (Fig. 1M), the controller configured to: operate according to a second mode of operation, wherein during the second mode of operation the controller generates the valve control signal based on a measured pressure at a particular pressure sensor (column 9, lines 37-55); and switch between the first mode of operation and the second mode of operation according to a predefined parameter (column 10, lines 35-55).

Bearden fails to disclose operate according to a first mode of operation, wherein during the first mode of operation the controller generates a valve control signal based on a differential between the first pressure and the second pressure.

However, Brown discloses operate according to a first mode of operation, wherein during the first mode of operation the controller generates a valve control signal

Art Unit: 2125

based on a differential between the first pressure and the second pressure (column 3, lines 40-62).

It would have been obvious to a person of ordinary skill in the art at the time of invention was made to modify the teachings of Bearden with the teachings of Brown in order to improved gas flow system that accurately measures gas flow during the delivery gas to a processing chamber.

Regarding claims 2 and 21, Bearden discloses a valve responsive to the valve control signal located between the inlet and the outlet (Fig 3D) and coupled to the controller(Fig. 1M); opening or closing a valve responsive to the valve control signal (column 36, lines 25-32)

Regarding claims 3, 12, 22, and 42, 51, Bearden discloses the second mode of operation the controller generates the valve control signal based on the measured pressure at the upstream pressure sensor (Fig. 1L, and fig. 1M).

Regarding claims 4, 13, 23, 43 and 52, Bearden discloses the second mode of operation the controller generates the valve control signal based on the measured pressure at the downstream pressure sensor (Fig. 1L).

Regarding claims 5, 14, 24 44 and 53, Bearden discloses the predefined parameter comprises a pressure differential threshold (Fig. 2A).

Regarding claims 6, 15, 25, 45 and 54, Bearden discloses determine the differential between the first pressure and the second pressure (column 8, lines 19-column 9, line 14); compare the differential to the pressure differential threshold (Fig. 2A); and operate according to the first mode of operation if the differential between the

Art Unit: 2125

first pressure and the second pressure is greater than the pressure differential threshold (column 12, lines 56-column 13, lines 43).

Regarding claims 7, 16, 26, 46 and 55, Bearden discloses determine the differential between the first pressure and the second pressure; compare the differential to the pressure differential threshold; and operate according to the second mode of operation if the differential between the first pressure and the second pressure is less than the pressure differential threshold (column 12, lines 56-column 13, lines 43).

Regarding claims 8, 17, 27 and 47, Bearden discloses the set of computer instructions are executable to calculate the pressure differential threshold based on the differential between the first pressure and the second pressure, a supply pressure and a valve position (2DD).

Regarding claims 9, 18, 28 and 48, Bearden discloses the set of computer instructions are further executable to monitor a pressure sensor for a fluctuation (Fig. 2A); and if the fluctuation is greater than a predetermined amount generate an alarm (column 13, line 1-24).

Regarding claims 10, 19, 29 and 49, Bearden discloses the set of computer instructions are further executable to: monitor a valve for a change valve position (2B); and if the change in valve position is greater than a predetermined amount generate an alarm (column 13, lines 25-51).

***Allowable Subject Matter***

5. Claims 33-37 are allowed.

The following is an examiner's statement of reasons for allowance:

Art Unit: 2125

The allowability of the independent claim 33 resides, at least in part, in that closest prior art of record Bearden et al. (U. S. Patent 6,167,965) does not disclose or suggest, alone or in combination, determine a control resolution based on the differential between the measured pressures, the valve position and valve resolution, in combination with the other elements and features of the claimed invention.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. Any inquiry concerning communication or earlier communication from the examiner should be directed to Kidest Bahta, whose telephone number is (571) 272-3737. The examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. EST. If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached (571) 272-3748. Additionally, the fax phone for Art Unit 2125 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Kidest Bahta



March 17, 2005